REMARKS

This AMENDMENT UNDER 37 CFR 1.114 is filed with a Request For Continued Examination (RCE) under 37 CFR 1.114, and is also responsive to the Final Rejection dated June 16, 2004. Applicants respectfully request the Examiner to reconsider the subject patent application in view of the following amendments and remarks.

The present invention was conceived for use with a low cost, low power computer such as may be found in a home, such as on a refrigerator or hanging under a cabinet like kitchen radios. The person that walks in front of the camera 101, computer 100, Figure 1, would be quickly recognized, and their favorite music played, favorite colors displayed, etc. Their email would also appear, possibly also a to-do list. If someone else stepped in front of the system, they would also be quickly recognized and accorded the same treatment, and their email would also appear. The edge detection methods of the present invention are traditionally used to scan parts on a belt and in similar applications where exact dimensions and scale are not important.

Systems installed in home environments need to be simple, quick, and passive to become ubiquitous, such as today's telephone set. If a person has to stand in front of a recognition device for five minutes waiting for a retinal scan or similar procedure, they wouldn't bother.

Edge detection algorithms are known in the art and are generally used for: 1) detecting or identifying parts or components on a conveyor belt; 2) identifying or selecting elements or objects from certain types of backgrounds; and/or 3) converging multiple images into a mosaic image. Edge detection is generally grouped into two categories: 1) gradient filter (e.g., Sobel filter); and 2) Laplacian filter (and/or Gaussian

filter). One skilled in the art readily appreciates that a gradient filter detects edges by identifying intensities in first-order derivatives in horizontal and vertical directions (i.e., X, Y directions) of an image, while a Laplacian filter detects edges by identifying zero crossings in second-order derivatives of the image. Additionally, one skilled in the art understands that a Laplacian filter is more sensitive than a Sobel filter for identifying edges, but is also more sensitive to noise.

The foregoing algorithms have not been used in a computing device in the prior art for launching applications (e.g., e-mail client) and accessing data associated therewith (e.g., e-mail) by determining the identity of a computer user based on edge detection algorithms.

The present invention determines the identity of a computer user for launching applications and accessing data associated therewith (e.g., launching e-mail client and retrieving e-mail associated therewith) via a digital camera, using an edge-detection algorithm, in a cost effective approach that can easily and effectively be employed in a computing device (e.g., Internet device) having the ability to easily differentiate among members of a household or members of a small-sized organization (i.e., users).

Most prior art face recognition software have focused upon an almost-exact identification of a person from within a very large group or population (i.e., fine granularity), thereby requiring sophisticated and high-priced equipment. Coincident with this sophistication, most such face recognition software invariably require fast processor(s), large non-volatile storage (e.g., hardisk(s), laser disk(s) and the like) and a large random access memory (RAM).

On the contrary, the present invention is intended to run on a low-powered, low-cost computing device or computer. Furthermore, the computing device of the present

invention is intended for identification of members of a typical household and/or a small-sized organization (e.g., about 50 members) (i.e., course granularity).

Based on the foregoing requirements, the computing device according to the present invention utilizes an edge detection algorithm (e.g., gradient filter), using a Sobel or similar filter, and preferably applies a Laplacian filter or Gaussian filter to the output of the Sobel filter to derive more accurate edge detection.

Reconsideration is respectfully requested of the rejection of claims 1-5, 7-14, 17-20 and 22-34 under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 6,519,607 issued to Mahoney, et al. (Mahoney) in view of US Patent No. 6,373,047 issued to Adan, et al. (Adan).

Mahoney discloses a method for controlling a computing device that captures an image and electronically compares the captured image to at least one stored image having a command associated therewith. Further, the method determines if there is a match to the image within a predetermined threshold, and if so the associated command is executed.

Mahoney discloses in column 2, lines 54-63, that the image pattern can be "an image pattern of his face" or "a motion with his hand or his finger, such as a motion of creating a circle, or a cross, or an X," and Mahoney is not more specific. However, it is clear that Mahoney does not filter the captured image by using "a digital edge detection algorithm, gradient filter, the output of which is applied to a Laplacian or Gaussian filter to provide accurate edge detection while being run on a low power computer."

Adan discloses an input device mouse for providing position information to a computer system based upon movement of the input device mouse. The computer input device accomplishes its objective by detecting images on a surface of a mousepad. The

computer input device generates input information that is indicative of a change event when the device switches from reading one predetermined pattern to reading another predetermined pattern on the surface area of the mousepad.

Adan et al. essentially discloses a computer mouse, shown as 42 in Figures 1 and 2A, and as pointer 102 in Figure 3, which operates in conjunction with a mousepad having a pixel array 123 as shown in Figure 4.

Accordingly, it is also perfectly clear that Adan does not filter a captured image using "a digital edge detection algorithm, gradient filter, the output of which is applied to a Laplacian or Gaussian filter to provide accurate edge detection while being run on a low power computer."

McLarin also does not disclose or teach filtering a captured image using "a digital edge detection algorithm, gradient filter, the output of which is applied to a Laplacian or Gaussian filter to provide accurate edge detection while being run on a low power computer."

In the Office Action, only the applicant acknowledged prior art discloses filtering a captured image using "a digital edge detection algorithm, gradient filter, the output of which is applied to a Laplacian or Gaussian filter to provide accurate edge detection while being run on a low power computer." However, the prior art does not disclose that concept in the context of the combinations recited by independent claims 1, 23 and 34.

Further, while Mahoney discloses an image driven operating system, Adan primarily discloses an input mouse device that provides position information to a computer system based upon the movements of the input device (*See* col. 1, lines 26-29). One cannot determine that there is proper motivation to combine the image driven operating system of Mahoney with an input mouse that provides position information to a

computer system based upon the movements of the input mouse of Adan in order to arrive at the presently claimed invention.

The Federal Circuit has dealt with what is required to show a motivation to combine references under 35 U.S.C. § 103(a):

> [R]ather then pointing to specific information in Holiday or Shapiro that suggest the combination..., the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the other-in combination with each other... described all of the limitations of the pending claims. Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the ... references, nor does the Board make specific-or even inferential-findings concerning the identification of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any factual findings that might serve to support a proper obviousness analysis.

In re Dembiczak, 50 USPQ2d 1614, 1618 (Fed. Cir., April 28, 1999) (citations omitted).

Thus, from *In re Dembiczak* it is clear that the Federal Circuit requires a specific identification of a suggestion, motivation, or teaching why one of ordinary skill in the art would have been motivated to select the references and combine them. In this instance the Examiner has not done this.

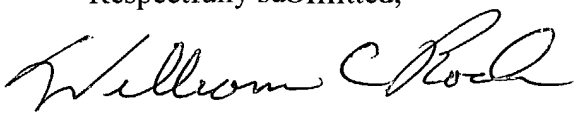
Thus, Applicants respectfully submit that the Examiner has used impermissible hindsight to reject claims 1-5 and 7-34 under 35 U.S.C. 103(a). To prevent the use of hindsight based on the invention to defeat patentability of the invention, the Examiner is required to show a motivation to combine the references that create the case of obviousness. Applicants respectfully submit that the Examiner has not met this burden.

In light of the Examiner's lack of specificity with regard to the motivation to combine the cited references, the applicant respectfully submits that the rejections based

on obviousness under 35 U.S.C. 103(a) lack the requisite motivation and should be withdrawn.

In view of the above, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicant's attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,



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